

The Intergenerational Effects of Social Security on Education in Latin America

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I. Introduction

For the last quarter of a century, there has been major debate in both economics and political science as to what effect social security has on different aspects of life such as poverty, the promotion of savings, the family, and even fertility. One area where research is scarce (and almost non-existent) compared to others is one of the most important and crucial pieces to any developing society: education. It is through education that societies can progress in both terms of human capital and technology, cultivating and promoting a stronger, more competent labor force filled with more skilled individuals. Because of this, a government should actively search for a way to make education a main priority, installing proper policies and expenditure guidelines to make it as efficient and effective as possible.

But can education be effectively improved just by spending money within the system? Can a system improve without a change of the culture or the family? While literature reads that having more resources and better paid teachers can improve a school, there is much more entailed to ensure that students receive the best education possible. All students need not only resources from the school, such as current technology, books, apt teachers, and a small student-teacher ratio. They also need to live in an environment where there is little distraction, where education can be *the* priority. A student needs a proper home life to enable her to take full advantage of her schooling. To achieve this, a government needs to do more than allocate money to its education system. It needs to find a way to promote a culture of education, starting at a micro level. The government, through social assistance or welfare programs such as social security, must assist families so that they can invest in themselves. Through social security, the grandparents of a family can have more stability. Parents can see the security “promised” for their own future based off the security of their elders. And the entire family, in both generations,

can invest time and money into the children's education, something extremely valuable and advantageous for all.

Family is extremely important in promoting proper education. It is through the family that opportunities can be provided, that values can be instilled. For, as Gary S. Becker, a Nobel Prize winner in economics, says, "The family plays a major role in the teaching of their children, in the human capital investments of their children, in the formation of the attitudes and values of their children, which are so crucial for their optimal development" (1975). But even if a family has certain values or particular ideals, this does not guarantee that education will be a main concern. At times, there may not be the opportunity to move forward and grow because of the present state. If a family is barely surviving and can only *just* afford its basic needs, such as proper food and clothing, it can not and will not focus its attention on education. Instead, that family will need to come together to ensure that basic needs are met. This may mean that the head of the household works longer hours or has more than one job. This may require females to enter the labor force. This may mean that the grandparents in the family will stay in the labor force longer than they safely can or should. This also might mean, especially if the head of the household can no longer work, that other more vulnerable members of the family, such as young children who should be attending school regularly, will enter the labor force prematurely. This young labor force should be discouraged and prevented. Here is where a strong welfare system precisely fits in.

It is through a welfare mechanism that a family has a type of insurance, a type of safety net that provides in case of death, in case of injury, in case of calamity, or in case of simply old age. And with a proper system that supports both the rich and, especially, the poor, children will no longer need to be seen as a means of survival or a supplementary form of income. Parents

will be able to focus on the quality of their children's lives and not bear children just to secure their own future. Instead, children will have the opportunity to concentrate on their own education without distractions from the labor force or work environment. They will be able to better equip themselves for the future with learned skills and knowledge, and will be able to create and promote a stronger generation.

In every society, whether it be rich or poor, developed or developing, urban or rural, there is always the presence of risk. It is more than a threat or an unlikely chance that only exists in the lives of the unlucky or the unfortunate. Instead, it is a reality, something that is both unavoidable and possibly quite consequential. With a combination of vulnerability and insecurity, risk can reveal itself in many forms, some of which are more hazardous and dangerous than others. There can be a reduction in available work; one can become ill or die; the main provider may not be able to provide adequately in a changing time or with a growing family. Everyone, despite their gender, ethnicity, or income, is susceptible to risk in one form or the other. What defines a person's experience with the consequences of risk, however, is a matter of how one handles it and what means a person has to prevent the manifestation of such risk. With the uncertainty of exposure to risk, then, all people should try to prepare to both mitigate the risk itself and cope with the consequences of risk if it should materialize. But, sometimes a family or a society can not do this without assistance. Instead, a government needs to step in and provide for its people – especially those that can not provide for themselves without desperate measures.

A government can help its people by providing support for them in the form of a social welfare system, which is a mechanism that can curtail poverty and lessen the possibility of risk and help cope with the effects risk can bring. There are different types of welfare that a

government can provide. Whether it be support in terms of increased housing, healthcare, education, or social security, an individual can greatly benefit, better able to cope with risk than she would have been able to before. And while all forms of social insurance are quite beneficial, social security (the focus of this paper) is extremely advantageous because of what it can provide and its far-reaching implications.

A strong social security is both imperative and valuable. It can alleviate major struggles within a family to make ends meet, especially when there are children who cannot take care of themselves or when there are elderly persons who can no longer contribute. With such a system come both direct effects such as a continuation of annual income and the availability of insurance, and some indirect, less common effects such as the promotion of household savings. This type of system can also help achieve many other goals such as economic efficiency, the reduction of poverty, the advancement of social equality and stability, and the opportunity for sound investment in the future. A reliable, functioning social security system should be seen, therefore, as vital to a society's success.

It is also with pension systems that the traditional role of the child can be altered, allowing a child to move forward. Traditionally, children were seen as a means to security, especially in developing countries. It was through children that parents could have a type of old age insurance. For when parents or grandparents were too old or not strong enough to work and provide for themselves and the family, the children could take the role as main providers and caretakers of the family. And while this is not as evident in developed nations, this is still a reality in many developing societies such as those in Latin America.

Having a child in the labor force can cause severe repercussions. Many times, the entrance of a young child into the workforce happens far too soon. This undoubtedly affects that

child's education. By depriving children of their education and making them work, a household or family "condemns them to a lifetime of low-status, unskilled jobs" (Rodgers and Standing 1981). This is why social security is so important. It helps an entire household, from the very old, to the head of the household who usually brings home the paycheck, to the very young. When a parent receives social security, there is less of a necessity for his or her children to act as a sort of "security" or a supplementary income for the family. Instead, protection provided by the government each month in the form of a social security can provide for the family and help it continue to live as it should. It is with social security, then, that fewer children are necessary to look after the parents when they can no longer work, and instead are able to make an investment in their own future. Even more, with social security, grandparents can invest time in the children rather than work. Through this extra time, guidance, and support, a child may flourish academically more than she would otherwise.

But how can the effectiveness of the investment in social security be measured or determined? First, the fertility rate should be considered. If children are not necessary for the survival of parents in their old age or when they are unable to work, families will start having fewer children, allowing them to invest more in the few they have. This is evident in the correlation between dropping birth rates and higher social security expenditures and GDP. When a country or a family is richer, fewer children are necessary. The quality of a child's life can then be considered. What may be more telling, though, is the quality of education of the children. This can be measured in both quantitative and qualitative terms, with a stress on the latter. By looking at the education system, it can be seen that a country and an individual's investment in the future, in terms of a retirement fund, can affect society, which will take great benefit from a more educated, skilled youth.

In current literature, there is too much focus on quantitative measurements to measure a school's effectiveness. Therefore, schools should utilize different qualitative measurements, such as scores on international tests, when deciding what actions are necessary for improvement. Unfortunately, qualitative measurements are scarce, especially in developing countries. This lack of information, then, requires the use of both quantitative and qualitative measurements to construct the most accurate picture. What one will learn by looking at both types of data and measurements is the fact that spending money on a school is not the entire solution. A rich school cannot produce great students without a main ingredient, that being the family. This family, then, must be supported when it cannot support itself.

This paper will focus on Latin America, which is known for its poverty, changing governments, changing social expenditures, and poor education. It will show that poverty can come in many forms, and can reach different people to different extents. The biggest problem with poverty, though, is its intergenerational movement – the way it can move from one generation to the next, especially when a nation lacks sufficient social assistance. If poverty can be curtailed, however, an individual may be more willing and able to propel forward, and remove herself from poverty. Studying the relationships between social security, fertility, education, and the workforce are, then, imperative. It must be determined how to improve education while at the same time tending to the needs of the older population. If this can be determined, countries, such as those in Latin America, may be able to significantly improve and grow in the right direction. While this paper does not find a perfect solution for the ongoing debate as to where to spend social expenditure money, it does proffer that there may be other options than just pouring money into a system, especially when members of the system cannot utilize the extra resources to the fullest extent. This paper also makes clear that education should be a factor when deciding

how to reform a pension system. For through education can come a stronger society, something any reform initiative should understand and take into account.

The body of this paper will first discuss arguments present in previous literature. It will then discuss social spending and how and why proper allocation is important. It will then discuss welfare, focusing on social security (as it is this that constitutes an overwhelming proportion of Latin America's social expenditure budget). It will describe what social security is and how different forms of it are more conducive to certain countries. It will then address the importance of education. From education, the paper will move into a discussion of the correlation between social security, the work force, and education. A simple model will follow, its results exemplifying both the correlation previously discussed and the need for better statistics. The paper will finish with concluding remarks about the correlation, as well as urge for others researchers to delve further into this investigation.

II. Discussion

Previous Literature

What connects social security, fertility, the workforce, and education? Some say nothing, that changing fertility is a product of changing times, of cultural norms and values, of an increased education of the mother, or of certain laws or subsidies that discourage reproduction. Cigno (1992) finds that while pension can influence fertility, what is more important and relevant is intergenerational altruism, where parents see children as a continuation of themselves, and therefore want to have children and, subsequently, take care of them to the best of their abilities. Others (see, for example, Boldrin 2005; Zhang Zhang 1996) see social security as a mechanism that influences fertility. This literature explains that parents have children to serve as

a sort of guarantee that they will be taken care of later in life. A child is a way to stabilize income and to provide security. These scholars explain, though, that by providing the older population with a mechanism to fight against the high incidence of poverty that they often face due to the lack of work or high replacement rates by younger, more able members of the work force, children are not seen as such a necessity. Hohm (1975) found that social security has a negative effect on fertility to the same magnitude that infant mortality, education, and per capita income affect fertility. Boldrin (2005) found that increasing social security decreases fertility. His results show that increasing social security by 10% of GNP causes a decrease in total fertility rate of between .7 to 1.6 children. It can be seen, then, that across studies of this nature, while the magnitude of the effect may be disputed, there has been much literature solidifying the strong, negative correlation between social security and fertility.

Some believe that there is a correlation between education and fertility, explaining that as the education of females increases, fertility decreases (see, for example, Jain 1981). They believe that a woman who can read will make more well-informed decisions about her future and the future of her children. It may be the opposite, though. It is plausible that as a result of fertility dropping, which can create a change of a child's role within a family, the quality of education increases as parents, and the government, can invest more in each child's education, even when faced with limited resources. Others see a relationship not between fertility and education, but between education and social security, both of which are main priorities and candidates for significant portions of a country's social expenditure. This relationship, however, is not often discussed in terms of a correlation, but simply an undefined connection. This literature mostly focuses on the determination of the optimal allocation of funds between the two (see, for example, Pecchenino and Pollard 2001; Kaganovich and Zilcha 1997). Scholars in this

school believe that money should be given to either education or to social security, and that the allocation to one does not affect the other besides taking money away from it. Education and social security, to them, are two completely separate entities, and the government should decide which demographic (students or the elderly) would be more beneficial to society if it received more money. Others link education and the work force, seeing that if a child enters the workforce prematurely, she will not only lose the opportunity to obtain valuable skills necessary to succeed and progress, but she will also perform more poorly in school than she would have otherwise (see Psacharopoulos 1996). These scholars see the danger in child labor.

What most literature is missing, though, is the link that exists between all of the aforementioned variables, especially social security, the work force, and education. All are undeniably related. This author sees the relationship between education and social security as a correlation that has extremely significant results and implications for any community, especially a society that is trying to develop in the most efficient, lucrative manner. Social security can affect education, just as it can affect fertility. And improving one area, such as education, may be difficult without improving the other. Social security is the answer. It gives people an opportunity to be stable in the present, and then invest in the future. It allows education to be a main priority. And it protects the family. If social security is made a governmental priority, all members of society, especially students and then the labor force, can greatly benefit.

Old Age Poverty, Intergenerational Effects, and Family

Poverty can come in many forms, all of which, if not curtailed, “can have a strong negative intergenerational impact, reinforcing the transmission of poverty from one generation to the next” (Moore qtd. in Barrientos and Heslop). A family can be impoverished for many

reasons, such as a shortage of work, a lack of a desire to work, a family too large to provide for, or simply due to a struggling community one was born into. A person can move from a state of comfort to poverty, though, for other reasons. The head of household, who in many low income families is the sole provider, may become disabled or injured, unable to work. This person may not be competitive in a market against his younger competitors. This person may become too old to work, especially in blue-collared occupations, something which he cannot control. While disability or unemployment insurance seems legitimate to most, old age insurance is often ignored because of the supposed responsibility and opportunity that older individuals have to save and accumulate “social, physical, and financial assets during their lifetime” (Barrientos 2002). This may exist in a perfect society. A family *may* be able to save enough for retirement in special circumstances. For most though, it is entirely idealistic and unrealistic, almost never the case, especially in low income areas.

Many older people, especially male heads of the household, have to support a family, and even at times an extended family. Because of this, there may not be savings or “extra” resources to live off of after retirement. Even in developed, prosperous nations, those who have secure jobs but who lack sound pensions can struggle to save enough to live the same lifestyle after retirement. In developing countries where saving is difficult in the first place, the “post-work” struggle is even more devastating. If there is no safety net, no insurance that the head of the household can look to when his time as a productive, active, healthy worker is over, other arrangements must be made. In Latin America especially, it is common for poor income houses to have, on average, two more members than higher income households. This makes savings even more difficult and survival during retirement more dangerous. These countries, then, *absolutely* need protection.

Older people have a “higher incidence of poverty, vulnerability, and social exclusion” (Barrientos 2000). When social security does not exist, though, others must take care of their threatened family members. Someone **must** compensate for loss income. Unfortunately those that compensate, often someone healthy and young, have to give up their own potential for their family. They must act in an altruistic way to protect those that cannot protect themselves. Family becomes the main source of support and of sacrifice, especially when government action is not taken. This is the reality that many people face and will continue to face unless the government intervenes through a social security program.

The Allocation of Social Spending

How to allocate money is a main concern for any nation. Where money should go to help catapult it to the next level is of extreme importance, especially when dividing it amongst social initiatives such as health, education, welfare, and housing. Countries realize this, exemplified in the rise of social expenditures in Latin America from the mid 1990s through 2004 and an increase in social spending by 2% of GDP until 2002 (Clements, Faircloth and Verhoeven 2007). The government invests in social spending because “social returns on investments in human capital are greater than those on physical capital in the developing world” (Hunter and Brown 2000). Physical capital can deteriorate, can become outdated with advancing technology, or can become unsafe. By investing in people, though, whether it be through their pensions, their healthcare system and hospitals, or their schooling, a government can produce healthier, more skilled, and more efficient workers. This has become widely accepted. But the debate still continues as to where money should go. Should government funding be given to workers that can no longer work and, thus, can no longer actively contribute to the labor force? Should

funding go to schools instead? Whether an older generation or a younger generation should be the primary target of such support is extremely controversial. And while most scholars believe that education is where most of the social expenditure budget should go because “higher investment in education results in later periods in higher aggregate output in this economy and therefore in higher social security benefits” (Kaganovich and Zilcha 1998), this author believes the opposite will prove to be more beneficial – not only to those receiving the social security benefits, but also to those that are in school and, as a result, the entire society.

So why would government give money to those that do not work anymore in the form of social security? The reasons are numerous. The promise of social security is an incentive to work when young. The guarantee of social security allows a nation to prosper, to enhance and continue to improve itself and its image. It is a type of transfer that can allow members of society to continue to spend and consume, increasing GDP. Most importantly, better pension systems allow education to be of utmost importance. There are countless reasons why a government should provide social security. But for some scholars, these reasons are not enough. They still believe the younger, more productive society is where social spending should go to.

Better pension leads to more resources and a higher standard of living, which leads to a better quality education for one’s child. Parents have more disposable income and can spend more money and resources on education. Grandparents can retire, and instead can give time to their grandchildren, helping to bridge the gap between school and home. Furthermore, the students do not have to provide for their families or themselves. Most agree that social security lowers fertility, increases the development of human capital, and may even lead to more growth (Kaganovich and Zilcha 1998). But many fail to realize that social security can improve a child’s opportunity to progress and succeed. This progression can be made possible through education.

Education is a main recipient of social expenditures in most countries. And while there has been an increased investment in education (and some figures such as primary and secondary enrollment have increased), Latin American schools still lag behind much of the world, exemplified by poor test scores, high drop out rates, and high repetition. There is something blocking or distracting children from taking full advantage of their school system. One possibility may be their families and their lives at home. Because of this, action must be taken in order to not only ensure that children have the types of resources and support to obtain the most out of their education, but also that they can specifically focus on school. Providing insurance to the elderly may be just what gives children the opportunity that they need. To understand what social security is capable of doing to the education system, though, one must first understand what social security is.

Social Security in Latin America

While different authors describe social security in many different capacities, this author focuses on social security as pension. Pension systems are “state instituted transfer programs aiming at providing income security to the elderly” (Rofman, Lucchetti, and Ourens 2006). They are a way that the elderly population can remain stable in an extremely unstable time in their lives. They plan to “aim to safeguard older groups and their households against hardship by providing a means of transferring income from work to retirement and providing insurance against contingencies such as sickness, disability or death” (Barrientos 2000). Pension systems also help replace more traditional, informal protection systems (such as children or informal social networks) that have existed in many societies. Pension systems can vary in many ways,

and finding the most effective, efficient, and sustainable type of program is imperative for all countries and their success.

In Latin America different countries have recently made reforms to their social security systems, all of which have had mixed results. Systems can have defined contributions (which ideally do not change through time or changes in economy) and undefined benefits, where the income is determined by factors such as the state of the economy and the state of the pension system as a whole. If the system is under-funded in this type of system, a lower pension rate may be administered. (Mesa-Lago 2007). These types of systems exist in Bolivia, Chile, Dominican Republic, El Salvador, Mexico, and Nicaragua. Pension systems can also have undefined contributions (which can change overtime and tend to increase overtime), but defined benefits. These are evident in countries such as Argentina, Costa Rica, Ecuador, and Uruguay. Systems can be public (administered by the government), private (administered by private institutions), or mixed. All of these types of pension systems have their positive and negative aspects. Public systems can be under-funded; private systems can be overregulated. No system can be said to “universally better” than the other because no system in Latin America has existed in a single form for an extended period of time in order to see if it is working exactly as it should. But all systems should be able to provide a safeguard and help against poverty, freeing family or other social networks from carrying the burden the old can cause (Mesa-Lago 2007). The type of coverage, adequacy, and sustainability each system can provide is a way to gauge whether improvement or reform is necessary.

Because of different types of pension systems utilized, there are many controversies and questions surrounding pension systems. The first topic that leads to debate and questions a system’s need for reform is whether pension, or social security, should be given to all citizens or

only to workers that have “earned” it. Some believe that pension should clearly be only for workers, as its purpose is create a continuation of a previously earned salary to provide stability and to help lessen the burden retirement can bring. If the citizen never worked, there is not a “loss” his family is experiencing, so the government should not step in. Others believe, however, that pension should not only be a continuation of previous lifestyle, but should also ensure “adequate living” (Rofman, Lucchetti, and Ourens 2006). For them, pension should be offered to anyone over a certain age that is a legal citizen of the given country providing pension. If pension is provided to everyone, more people will have the chance to remove themselves from hardships or poverty.

The next area of controversy is who should finance a pension system. Some believe that it should be contributory, that people receiving the funds should be the only ones who pay into the system, which can be done in many ways. Workers can pay for their future pension by contributing to it during the duration of their career. Workers can also pay now, funding the elderly population of the present (with the hopes that the younger generation will do the same for the current worker in the future). Finally, a system can be created where all workers put money into a universal fund that is used to pay for all pensions. Others, however, believe that a system should be non-contributory. These scholars believe that the funds should come from not the workers, but from other general areas. With a non-contributory system, those who cannot find work and, thus, cannot pay into the system still have a chance to receive money once they reach old age. In Latin America, most of the pension systems deemed as PAYG (or pay as you go), or a combination of both a contributory system and a non-contributory system (Mesa-Lago 2007). While these systems may prove difficult to manage in the future, they allow for the poor to have opportunities, as scarce as they may be.

Finally, coverage is often looked at to decide whether a system needs reform. Usually different goals are in mind when determining what type of coverage a pension system will employ. A country that wants high labor participation rates, for example, will have a lower coverage rate than a country that wants to provide an adequate lifestyle to all of its citizens. These countries that value a low unemployment rate see pensions as an incentive for people to join the labor force. What has been seen in Latin America, however, is that no matter what a country values, coverage rates are inadequate. In half of Latin American countries, less than thirty percent of the labor force is covered. Furthermore, there is a growing coverage gap between the rich and the poor. There is a higher coverage in the public sector than in the small or private firm sector as well. Coverage, as well as the adequacy of benefits and the sustainability of the system, needs to be focused upon if one wants to help change society with social security. Without looking at all three of these pieces at the same time, the most efficient system can not be achieved.

Social security is more than a paycheck. It is more than assisting the elderly who have given years of service to their field. It is insurance. It is security. And it is an opportunity for the whole family to take individualistic opportunities presented to them without the fear of their family's collapse. Pension does not just affect the old. It has an intergenerational effect which can affect all members of the family. Pension is a means of defense, a protection, which can help alleviate risk, allow a family to continue, to re-create, or simply to live after time has taken its toll. Pension is extremely important, as it allows someone who is incapable of working safely to stop working without affecting the family's life dramatically. And while poverty may not affect all people and not all people will want to retire, having the possibility to retire without affecting the family is something that all deserve.

Social security is a way to mitigate risks. It is a way to fight poverty. And although the perfect form (whether it should be private, public, or mixed; whether it should have high or low coverage; whether it should be self-sustainable; what role the government should have in it) is often debated, the goal should be same. All members of society, whether they are rich, middle class, or poor, should receive necessary aid from a social security fund. Some may receive more than others, and some forms may be more conducive to the needs of one individual than another's. Different systems will work best within different societies (and their given politics, populations, economies, and laws). By looking at the effects social security has on other aspects of society, such as education, the best possible type of pension may be chosen.

Education System in Latin America

Even before using regression analysis and quantitative and qualitative correlations and even though educational attainment is difficult to measure, it is clear that the overall state of the education system in Latin America needs repair. Education in Latin America is six years of primary schooling, two to three years of “basic” secondary schooling, and three or four years of “upper” secondary schooling. The official entrance age is 6 or 7, depending on the school. Most countries are compulsory and free. A major problem found in the system, though, is that a great proportion of educational funding goes to tertiary education. While tertiary education is important for development, it is often utilized only by the rich, elite, or those that come from the most educated families. This causes severe gaps and imbalances, especially for those that do not have the opportunities that the elites and rich have. These gaps, however, are only the beginning of the long list of Latin America's education dilemmas.

Statistics from Latin America regarding the state of its average education system are daunting. Fifty million people in Latin America do not know how to read or write. Nearly one third of Latin American students in primary school repeat a grade. Secondary schools are often in remote areas, giving some students little access for continuing their education. Latin American students also receive three-and-a-half years of less schooling than the average OECD country. While ninety-two percent of Latin American children begin primary school, only thirty-two percent move on to secondary school. Over forty million students drop out of school to work (World Fund). And while some countries such as Chile seem to be improving, other nations seem to be stuck in this dismal state. In Brazil, for example, thirty percent of children stand no chance of attending school (Rodgers and Standing 1981). The OECD estimates that only eighteen percent in Argentina, sixteen percent in Brazil, and twelve percent in Uruguay attain an upper secondary education (Barro and Lee 1995). These numbers are significantly lower than OECD members, most of which are over fifty percent. Furthermore, the average amount of schooling for the total population aged 25 and over in Latin America was 5.73 years, while in advanced nations it was 9.8 years (Barro and Lee 2000). Because of these startling figures, something must be changed.

Why Education?

Nations certainly go through cycles, where government programs fail, economies recess, systems need reform, and policies become irrelevant or outdated. No aspect of society or entity of any government will remain perfect or functional forever, especially as the population changes or GDP grows or shrinks. Education, however, should not be cyclical in any regard, as it holds the key to a country's future. Curriculum may need to be revamped from time to time; school

buildings and resources may need repair. The education system as a whole, though, should always remain a main priority in any society because of what it can provide. For it is with a sound, consistent, and reliable education system that any country can move from a struggling state to greatness.

It is universally accepted that education is extremely important to any nation. Without education, a country will stagnate and fall behind its more educated counterparts and competitors. An education is, therefore, an investment that has implications far beyond one's learning to read or to write. It gives society skills and the desire to grow and improve. It prepares students for the labor force. It increases technology and the ability for people to use this technology effectively and resourcefully. This increased technology and better skilled and equipped labor force can then help increase the output goods and services, which can then affect and improve trade and, ultimately, increase GDP. Without education, both within and outside of the home, children can not grow to their fullest potential. With education, all aspects of life, from fertility to the economy to income distribution, are significantly impacted.

An educated, skilled workforce is an asset that conflict, globalization, or other pressures cannot take away from a society. Education increases development in many different ways. It has the capacity to shape a nation ethically, economically, socially, culturally, and politically. (UNESCO). It teaches a nation's citizens in their formative years the habits and skills necessary for life. It bridges the ever-growing gap between the rich and the poor. It is the method by which someone can get ahead. It allows people to acquire knowledge about a broad array of topics. It gives students the capacity to inquire, to question the status quo. It helps youth develop skills to deal with difficult situations, work in groups, and "develop themselves in different social and working contexts" (UNESCO). An educated person understands how and when to use critical

thinking skills – which can be utilized in many different areas of life. Education allows a person to develop her creativity. It teaches people how to live together in a peaceful, understanding environment. Education can help reduce inequality between different economic and social classes in a country. Most importantly, education allows a person to create his or her own unique identity and “act with a growing capacity for autonomy, judgment, and personal responsibility” (UNESCO).

The benefits that education can bring are tremendous, having the potential to alter and rectify many lasting problems nations have. It is clear, then, that education should not be ignored, and all individuals and families should try to invest in their children in order to give them a proper chance for survival, progression, and success. Cognitive skills are invaluable in the workplace, and by obtaining these crucial skills in schooling, countries can not only have a more intelligent public, but also can increase economic growth rates.

Measuring Education

It is clear education is important. How can one know, though, if a system is effective? How can one measure an education system? Some believe that statistics on student teacher ratio and student enrollment are good indicators. These, though, can be nearly impossible to compare on a trans-national scale because of the unavailability of the statistics or government fabrication. Some use the amount of schooling a teacher has, a teacher’s salary, the length of the school year, or the number of school days to measure a school’s adequacy. This, too, is hard to compare. Others, such as Seelke, look at dropout and repetition rates, which he says are “still high, particularly at the secondary level, with boys tending to have higher dropout rates than girls” (2005). Yet, drop out and repetition rates can also be manipulated or underreported by the

government, making them unreliable when trying to distinguish one school's achievement from another's. Furthermore, they are not consistent trans-nationally because of differing interpretations or definitions. What deems a "repeat" in one country, for example, may be perfectly acceptable to advance in another (Barro and Lee 2000).

So can these statistics be used? What really do these types of statistics show? They do not show how much a student puts into his schooling. They do not show if teachers really do their job. They do not show if students, even if enrolled, are attending and actively participating at school. For as Rodgers and Standing say, "school enrollment is very different from school attendance, which varies in its regularity and duration" (1981). They do not even show if money put into the school is used on the students, or if it is instead, for example, used to pay the administration. These quantitative measurements are not clear ways to understand how a school is performing.

In order to effectively compare and then try to improve a school system, quantitative variables must be supplemented by unbiased, fair, and standardized measurements. While these are not too prevalent yet, there is a new movement to focus on a school's quality, and not quantity, measured by test scores. Tests, such as The Third International Mathematics and Science Study (TIMSS), the International Adult Literacy Test (IALT), and the Programme (sic) for International Student Assessment (PISA), are a new wave of assessments being administered worldwide to qualify how countries score on an internationally comparable scale. The creators of these tests realize that labels or numbers do not mean much, and in order to get a more accurate read on education systems, have tried to gauge the tests on an equal, unbiased basis. The IALT, for example, changed just distinguishing between being literate and illiterate. Instead it measures and distinguishes literacy and illiteracy using different definitions such as prose

literacy, document literacy, and quantitative literacy. PISA wanted to make questions fair for all nations, so the committee worked extensively to eliminate any type of nation specific jargon or material from its test. These tests are trying to help countries improve by letting them know where they are compared to others.

This type of measurement is far from perfect because of its relatively small, mostly industrialized testing group (only a few countries from Latin America have participated in these types of tests). More and more countries, however, are beginning to take part in the assessments. While test scores may not show a complete picture of how a school is performing, they certainly show a glimpse of how a nation compares to its peers. Even when only looking at the few countries that have participated in these tests, it can be seen that Latin American countries, who almost always score way below the mean and median scores, are struggling. This requires educational reform.

There is not a perfect correlation between educational spending and increased test scores, though. Something more must be at play. A culture that stresses education, for example, sees significant results. This can be exemplified by the great success of the “Asian tigers,” which see teachers as some of the most esteemed, prominent members of society. But sometimes, a child needs more than a culture. For a child to succeed in school, she needs a wide array of contributing factors. She needs quality, challenging teachers and resources. She needs a sufficient amount of days to ensure she learns the material effectively. She needs a school that stresses progression. She needs a proper school infrastructure and a friendly classroom environment that promotes learning. The school she is at needs to have enough money to provide these requirements to her. More importantly, though, she *needs* a supportive family. Family can change a child’s education, especially when a culture that promotes and values

education does not exist. Without a strong education-oriented family, a child may not develop academically and cognitively as she should.

If a family does not value education, it is unlikely that a child will either. If a family stresses just how crucial actively participating in one's education is and provides resources to supplement and nurture that child in her education, though, that child is much more likely to take advantage of opportunities set in front of her. As Lockhead states, "The academic performance of students is affected by non-school factors and by the family background of the students. Family background affects not only the probability that children enroll in, attend and complete school, but also the learning of children in school" (qtd in Barro and Lee 2000). This is obvious. A more supportive, school-oriented family will more often than not have better students. There needs to be more than the ideal though. There needs to be desire. Most importantly, though, there needs to be an opportunity to achieve this desire.

Some parents simply cannot afford to offer their children the necessary resources. Families must survive, and to remain secure in the present, they must sacrifice investment in the future. Poor families recognize and understand the importance of schooling in the possibility of "upward mobility". A great majority of underprivileged people, though, cannot afford to educate their children without help from their government (Hunter and Brown 2000). Instead, they struggle, and make the decision that poverty must be "shared". This means that "they take their children out of the school and send them to work at very early ages . . . nine, ten, eleven, twelve. They [the working children] earn very little, but the little they earn help contribute to the income of these very poor families" (Becker 1964). These families need their children to work, to take responsibility for the family. They need the children to provide what parents or grandparents can no longer contribute. By putting the children into the workforce, a family has a

chance for survival. The child's chance of development, however, decreases more with each year of educational abandonment.

This educational abandonment is an all too common reality. In Mexico, for example, "about 20 percent of children live in households in which revenues cannot cover nutritional needs and minimum spending on education" (Guichard 2005). Because of this, children turn into workers faster than they should. Rossana Patron explains this in her "Early school dropouts in developing countries: An equity issue? The Uruguayan Case," saying that in Latin America, the poorest children are most often those who lose academically. These children, for example, drop out of school at around 13, while "drop outs" from the richer families average around 17. This comes as no surprise though. Parents' income positively influences a child's academic performance. They can provide more resources, such as books and supplies. They can foster a better environment for learning. They can allow and encourage children to spend most of their time trying to learn. Richer families give children more opportunities and chances to obtain skills necessary. And for this reason, economic inequity is difficult to fix. If the rich become richer through schooling, and the poor cannot move from their status quo, inequity will not only remain, but also become more magnified.

If some mechanism or institution can be offered to both the rich and the poor to ensure that children have the opportunity to succeed, however, this inequity may lessen. If families cannot provide and promote the proper atmosphere, the government may be able to step in and direct a family's outcome. It can do this by putting money into the education system. It can also, though, provide money elsewhere that may make more of a difference – to a member of household who has worked extensively and now is too old to support the family.

Successful education needs more than money poured into a school. Instead, it needs focused, determined students who take pride in learning and are able to make education their biggest priority. So how can high quality education be obtained? A large budget for educational spending certainly can help, allowing students to have the proper facilities and resources necessary to succeed. What may be more, however, is the environment that students come home to, and whether there are other major distractions or responsibilities that student must face. For this reason, government should support the head of household, giving them a steady paycheck in the form of social security, so that children do not have to. With a strong social security system, those no longer able to work can live on their own or support the rest of the family, not relying on the young who should be active students. Children, then, can avoid acting as “care-givers” to their siblings or parents, and can start not only going to, but also investing in, school.

Social Security, Education, and the Work Force

There is no doubt that children are an integral facet of economic growth, providing a way for human capital to not only multiply, but also to strengthen. As human capital is extremely important for any society, it would be logical to invest in those that can help it improve. Thus, the analysis of the determinants of investment in schooling among different subgroups in the population and levels of education attained are of major concern for policymakers. Many scholars (see Barrientos) believe that investing in the young can help society more than investing in the old. They see a more far-reaching result in this than providing for someone that can no longer enter the workforce or reciprocate the benefit they are enjoying. They see children as a means for growth and believe that investing in them through their education is the most lucrative way to spend money.

What if, however, insuring the old can help the young, allowing them to invest in themselves? If children have the opportunity to better themselves and to become educated, they will perform better. But just by spending money on an education system does not mean it will necessarily be effective. There has to be a will *and* an opportunity. And a child whose family is failing to remain stable, or at the very least healthy, may have that will, but not the opportunity. Families invest in children's education for many reasons, among them the expectation that education will increase the child's future earnings. Governments also invest in education in order to raise the skill level of the labor force and, hence, to increase worker productivity and income in society at large. (Psacharopoulos 1996). With pension benefits, especially in developing countries, these same results can develop. Children who live in households that receive pensions will have higher rates of enrollment because they do not have to work. Pension will help fight against poverty and will allow more of an investment to be made in a child's education at the micro-level (Barrientos), rather than at a macro-level.

Being in a labor market is the most lucrative way for a household to maintain a healthy and comfortable lifestyle because of the money or the possessions gained. If a family is struggling, children may have to enter the market, or may have to work in another capacity to help supplement the family with what it needs. Children's "work" can come in many different forms, all of which bring consequences. A child's main "duty" should be to enroll in and attend school full-time. Many times, though, even though school may seem like the "main activity," it takes up very little of a child's time. Instead, the child can be working domestically. She child can be working outside of the home but without pay (as many children of farmers do). She child can be doing an apprenticeship, something that may give her some skills to get a job later. She

may even be working for a wage. Any of these forms of work, though, can be extremely detrimental to a child's growth. For this reason, child labor, in any form, should be avoided.

Entering the labor force prematurely, as many children must do when family members can no longer provide, is extremely dangerous. Working is "likely to leave children without the energy, time and inclination to attend school or to learn while in school" (Rodgers and Standing 1981). Working children, who are extremely distracted in school and do not have time or energy to put into schoolwork or reading after school are three times more likely to fail a grade. Also, working children are less likely to continue their education compared to their non-working counterparts (Psacharopoulos 1996). Furthermore, "a working child has a deficiency of 1.4 years of schooling relative to a non-working child by the legal working age of 14, and 2.5 years by age 18" (Psacharopoulos 1996). While these 2.5 years may not seem like much, these years are crucial in developing skills to allow that child to capitalize and thrive in the workforce later in life. Children that are working not only miss out on their education, but they also can suffer throughout the rest of their working lives, having to join informal, less stable industries. These children coming from poor families will most likely not be able to get out of the cycle of poverty. With informal jobs, they might not get social security when older (as it is often given only to the formal sector), which will propel this cycle even further.

Because of the negative repercussions that working can have for the child, it should be seen that some type of government intervention is *absolutely* necessary in order to prevent child labor (which in it of itself should not exist). Spending money only on education is not the answer. Even when kids have the best resources and the best facilities, this may not be enough. If the family cannot afford food or clothing, the child will not go to school or will not be able to devote proper attention to school and capitalize on the resources given. So as a struggling,

developing country is trying to decide where allocation of funds should go, that country should realize that giving children an opportunity, rather than improved resources without an opportunity, should be the priority. Children should not miss out on the gains from basic schooling, such as “improved nutritional, health, and family planning practices among the population” (Hunter and Brown 2000). This can be prevented by giving the older generation social security.

Families are undoubtedly smaller than they once were. With the birth rate declining in most developing nations, families, especially those with disposable funds and pensions, are proving that they do not need children as a main “safety net” like they once did. Instead, they can focus on the quality of each child, instead of the quantity of children (Becker 1975). They can also accept “that schooling is [and should be] a child's work” (Wolff, Ernesto, and Valenzuela 1994), something that can advance and improve the child, the labor force, and the economy as a whole. If a family does not need to worry about their financial situation because of government intervention, a supplementary income that child's labor would produce would not be necessary. If for some reason the head of the family can no longer work, the whole family does not have to suffer. If social security is offered, one where a large percentage of one's working paycheck is covered by his social security paycheck, the family can move forward. Children can then avoid working, and can thus avoid the consequences working can bring. Through pension, the retired can take a more active role in the children's schooling, and can help them with studies, homework, or reading and writing skills. Through this extra time and attention, children may have the opportunity to progress at a much more significant rate than before. Pension will also lessen fertility, which will affect each child's education. With fewer

children, more of an investment can be made on each child, perpetuating that child's education and linking that child with a greater chance for success.

III. The Model

Using twenty-five Latin American countries (see appendix A for a list of all countries) and data from 1980 until 1995, a cross-sectional analysis was utilized to see the influence social security had on education. The author sought to show that government spending on social security did have a significant effect on educational spending and that the two could be complements rather than solely rivals. Because the author believed that the two expenditures were, indeed, connected, a positive correlation would support the hypothesis.

This is by no means the ideal data set for this investigation. The author would have ideally liked to see the correlation between social security spending and data such as primary and secondary school attendance and a nation's overall scores on international test. Because of a lack of accessible records due to changing government structures, because of the inaccuracy of much of the current data, and because education statistics (especially qualitative statistics) have not been deemed as extremely important until quite recently, the data utilized, although not perfect, are the best available. There are, however, new initiatives led by non-profit organizations such as UNESCO to make educational data more accessible and reliable. The author firmly believes, then, that a further study of the correlation between social security spending and educational attainment will be easier, and more successful, in the future.

Even with this obstacle, however, the results do support the discussion. Furthermore, the results suggested some new ideas, such as the role of democratic governments, and highlighted that social security takes years to manifest itself and produce results.

The author chose the type of regression employed for many reasons. First of all, the author speculated that it would take years for a change in social security spending to show a significant effect on education. Because of this, a lag was used. Also, the author wanted to show that different levels (or changes) of social security from year to year may make more of a difference than the specific amount spent. That is, a forward momentum may be more significant than exactly how much money was spent.

Dependent Variable

The dependent variable is the spending on education as a percentage of all government spending. The regression was ran to see if, first, social security spending in any given year affected educational spending in that same year, and second, if social security spending in the past could predict or affect education spending in the future, in terms of overall level and then change in level from one year to the next. Again, while a variable such as international test performance would have been the ideal dependent variable, the educational spending was the most complete type of data found throughout the investigation.

Independent Variables

The analysis looked at a number of independent variables, both economic and political. Social security as a percentage of all government spending and housing as a percentage of all government spending were brought into the analysis to see if one social expenditure could affect the other. The author used the total government social spending as a percentage of GDP and the real GDP per capita (in constant dollars using the Chain index based on the purchasing power based on 1996 international prices) (Huber and Stephens) in the regression as well, as a country's

wealth certainly would make a difference as to how that country is able to spend money and how one type of spending would influence the other. Finally, the democratic level of a country, based on a polity score, was used to see how, if at all, democratic politics had any influence on educational spending.

The author looked to see what influence social security spending had on education spending by utilizing both a lag and a change model. It is logical that a system such as social security would take time to reveal its results. Even more, at a given point, there is only so much money a government can spend. Because of this, a government must choose what to spend it on. If the government chose to give all of its money to education one year, it could not give all of its money to social security in that same year (as that would require double the money). Because of this, looking at the same year may undermine the ultimate effect social security would have on education, producing a negative correlation.

Also, when looking at the effects of social security on education, one must think about how much change there has been from one year to the next. This is a dynamic process, one that takes into account that the effect social security has on education may not be from the overall spending on social security, but from the change of spending from one year to the next. If parents see that their own parents (the grandparents) are being taken care of by the government at a higher level than before, those parents may feel more secure. This is not necessarily because of the amount of money spent in total, but the extra amount spent (or the difference) from years before.

Results

The regressions offered the following results, summarized in Table A.

Table A.

	I.		II.		III.		IV.	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
Education Spending %								
Education Spending % _(t-1)	0.827 ***	0.049	0.897 ***	0.076	0.850 ***	0.040	0.813 ***	0.041
Social Security % _(t-1)	-0.022	0.023	-		-		-	
Social Security % _(t-10)	-		0.035 **	0.016	-		-	
?Social Security % _(t0-t-1)	-		-		0.122 ***	0.036	-	
?Social Security % _(t0-t-10)	-		-		-		0.0002	0.0003
GDP _(t-1)	-0.015	0.027	0.075 *	0.046	-0.018	0.031	0.090 ***	0.027
Real per capita GDP _(t-1)	0.000	0.000	0.000	0.000	0.000	0.000	-0.0002	0.0002
Total Gov Social Spending % _(t-1)	-0.005	0.021	-0.025	0.038	-0.017 **	0.008	0.016	0.015
Household Spending % _(t-1)	0.041	0.070	0.174 **	0.072	0.068	0.062	0.212 ***	0.031
Democracy _(t-1)	0.022	0.021	-0.310 **	0.144	0.020	0.021	-0.343 ***	0.095
Constant	2.696 ***	0.771	2.683 ***	1.243	2.523 ***	0.802	3.474 ***	0.753
N.	176		61		176		57	
R-sq	0.809		0.804		0.802		0.8826	

* p < .1; ** p < .05; *** p < .01

Notes: Prais-Winsten regression with panel-corrected standard errors and correction for AR-1 autocorrelation

All variables, except GDP and Democracy are measured as a percent of all government spending. Democracy is measured using the Polity2 variable from Marshall and Jaggers (2009). All spending data provided by John Stephens, available at:

<http://www.unc.edu/~jdsteph/common/data-common.html>

*** ? signifies delta (or change)

When looking at the model, different observations can be seen. First, one can see that, as the author anticipated, it takes years for social security to fully take affect. Government spending on social security as a percentage of its budget influences government spending on education years later, with a stronger effect as time goes on. The effect of democracy also changes across model specifications, depending upon the specification of the social security variable. It can be seen that where social security is measured either as the one-year lag or change (models I and III), democracy does not have a statistically-significant effect on education spending. Where the ten-year lag and ten-year difference in differences of social security spending are included,

however, it can be seen that lower levels of democracy are associated with higher levels of education spending.

This result was the most surprising and perplexing, as it challenges conventional theories of democracy that assume a more democratic government is more responsive to its people. Even governments that are not fully democratic, however, may still face pressure, especially if they lack legitimacy for being undemocratic. Strong democracies in Latin America, then, are not automatically more committed to education spending. They are not necessarily more responsive to their people and to the pressures they receive to reallocate resources to education spending. There must be, instead, something more than democracy that drives change in allocation. One possible explanation is the fact that governments have changed radically in Latin American countries. If a country was ruled in a totalitarian manner and devoted all of its resources to education, a more democratic form, which may respond to other pressures by spreading the social budget amongst a couple initiatives, may produce negative results. Because democracy in Latin America is relatively new to most countries, the fact that social security influences education in a positive manner may take longer to manifest – not showing itself until the government remains stable and democratic for years.

Turning to the effect of social security development on a government's education spending, the statistical result suggests clearly that the sense of economic security relating to social security will take some time to manifest. The grandparents in a community will receive money, which may make the rest of the family more secure. This social security, especially if it is growing each year, will instill hope in parents that they too will be taken care of, and that they can take a chance and invest in their children. This is why looking at the change of spending from year to year, and over longer periods of time such as a decade, is so crucial. If parents look

to the grandparents and see a positive type of year-to-year change, these parents will be more secure in investing in their children's future rather than their own.

By looking at the regressions, it is clear that the development of a social security takes considerable time to have an impact on education. If people are receiving social security, they can not only meet their basic needs, but then they can also become more vocal and press the government for a more efficient education system. Furthermore, if parents see a positive trend in social security expenditures that will allow them to take care of themselves in the future, they can invest in their children in the present. If parents can expect that grandparents are taken care of, they may feel more comfortable investing in the children rather than in themselves, as they will be seemingly taken care of by the government later.

Notably, one can see that the effect of a one-year change in social security spending on educational expenditures is significant (model III), but a ten-year change is not (model IV). However, the opposite trend is apparent when we examine the lagged levels of social security spending (as a share of government spending). In model I, it can be seen that the prior year's level of social security spending is not statistically significant as a predictor of educational spending as a share of the government budget. By contrast, the coefficient on the ten-year lag of social security spending (model II) is statistically significant, suggesting that the impact of a given *level* of social security spending on educational policy takes considerable time to reveal a significant effect. As aforementioned, these processes are likely to take time. Parents need time to develop a sense of security before they will demand more educational commitment for their children from their government. It will take time to remain secure enough in the present to start investing in the future. And if there is a trend that grandparents will be taken care of, parents, who see this trend and become more and more secure as each year passes where social security is

available, will invest in their children, who can then see this undying trend and be able to invest in their own children in the future.

IV. Conclusion

All school is undoubtedly important. The European Universities Continuing Education Network (ECLAT) has indicated that eleven to twelve years of schooling are necessary to be successful and have the opportunity to remove oneself from poverty. Each additional year equips a person with more skills and knowledge, which is exemplified in the fact that “increasing the average amount of education of the labor force by one year raises GDP by 9%” (Hunter and Brown). Primary and secondary education, then, are crucial for proper development (most say more important than tertiary). Students deserve to have the opportunity to enroll in *and* complete these school years, which give them the basic skills needed for a successful job and prosperous life. Much literature is dedicated to the fact that there is a significant positive correlation between high test scores and economic growth. Sala-i-Martin, Doppelhofer, and Miller show in their empirical analysis of 88 countries that primary school is the strongest influencing factor on GDP from 1960 to 1996. This shows the importance and the significance of primary education. While this author sees the great value in primary education, she believes that a compulsory and attainable secondary education should be the focus of government programs because of the shortfalls in secondary education currently.

Primary education is not enough, for it gives only basic skills in reading, writing, and numeracy. Secondary education is where “skills that are most vital for the workplace are developed” (UNESCO). Less than seventy percent of the Latin American population, however, completes their lower secondary education. Even worse, in countries such as Guatemala,

Honduras, and Suriname, less than twenty-five percent of the population completes their upper secondary education, which is necessary because of the skills obtained here (UNESCO). There is an extreme deficiency of secondary education workers. This can be partially explained by the fact that many kids must enter the labor force before they should (DeFerranti).

This shows there *must* be a change. There *must* be alternative measures used to fix this problem. And an investment in the family, rather than directly to the school, through social security may be just the measure necessary because of what such an investment can offer. A resourceful school that can utilize technology, *coupled* with a stable home life that can provide a proper environment for learning is imperative. The government should take the necessary steps to ensure this pairing.

“... [P]oor men and women are dominated by dysfunctional time preference behavior, in which the pursuit of immediately needed security places them in relationships and structures which then displace the longer term prospects of a sustained improvement in their livelihoods” (Wood 2003). This can be perfectly exemplified when children begin to work instead of fulfilling their own education potential because of the need for money when the head of the household can no longer work. The children begin work at an early age and subsequently drop out of school before they can obtain the skills necessary to further themselves. Instead, they stay at the status quo, trying to survive instead of trying to progress.

If the family can barely meet a basic standard of living, how can any member think about bettering his or her individual condition? That person wants to live. She wants her family to live. So she will stay poor in order to stay secure. She will live poorly in the present to stay secure in the future. She will not take risks. She will not take opportunities that might improve her condition. Food, water, and shelter become more important than schooling. So she must do what

she needs to do to obtain them. She will only do what is guaranteed. The prospects of opportunities from schooling are not guaranteed. A paycheck from a job is.

Government has the opportunity to change this though. For “if parents’ preferences combine a strong concern for their retirement with significant degree of altruism towards their children, then a pay-as-you-go social security system does enhance growth and welfare.” (Kaganovich and Zilcha 1998). Social security allows people to live for the future, as their present is already secure. It allows a child to be determined by her success, not by the success, or lack thereof, of her processors. No longer is the house limited by its resources. Instead, the members of the household have unlimited possibilities. With social security, people can avoid, or remove themselves, from poverty. They can become educated. Parents will not bear children exclusively for security purposes. Fewer children will exist, and more of an investment can be made on each child, even if school resources are limited. Through education can come opportunities to better the family, better individuals, and better society. One can learn to learn, learn to act, and learn to be (UNESCO). And with an educated youth, one that is not distracted with work during the time vital skills are taught, all can be better off. Social security is by no means immediate. Its effects do not manifest at the same time that it is instituted or administered. After years, though, effects can be seen and progress can be made. Government spending on social security undoubtedly affects education, and this effect should be ignored.

This by no means is the complete picture. More research needs to be conducted, especially when more accurate, representative statistics are available. What can be taken, though, is that to improve a society, one must be educated. To become educated, one’s priority must be education. Through family or through culture, this must be emphasized. Work, especially during the primary and secondary years, should not interfere. It is for this reason that

governments should look to spending money on social security and try to create and then foster the type of atmosphere necessary for educational success.

This analysis shows the extreme importance of pension reform, showing that there are more externalities to this type of reform than most may think. Pension does not just affect those that receive it. It is not something that has an influence just on the contributors to and beneficiaries of the system. Instead, it has an impact on all generations. Pension reform does not just affect the workforce and those that can contribute economically to society. Instead, it can have a lasting impression on the younger generations through their education. It is because of this that pension reform must be a priority in all struggling nations, as it has the power to change the lives of the young, and, in turn, of society.

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Appendix A

Latin American countries used in regression analysis:

Argentina
Bahamas
Barbados
Belize
Brazil
Chile
Colombia
Costa Rica
Dominican Republic
Ecuador
El Salvador
Guatemala
Guyana
Haiti
Honduras
Jamaica
Mexico
Nicaragua
Panama
Paraguay
Peru
Suriname
Trinidad and Tobago
Uruguay
Venezuela

Appendix B

A closer look at regressions ran:

edsppct	Coef. Std. Err.	z	P>z [95%	Conf.	Interval]	
edsppct						
L1.	0.845414	0.063053	13.41	0	0.721832	0.968996
sscsppct						
D5.	0.011801	0.004577	2.58	0.01	0.002831	0.020771
totgdp						
L1.	-0.01333	0.057477	-0.23	0.817	-0.12598	0.099327
rgdpch						
L1.	8.20E-06	6.37E-05	0.13	0.897	-0.00012	0.000133
totsppct						
L1.	-0.01583	0.011666	-1.36	0.175	-0.03869	0.007036
hsesppct						
L1.	0.067996	0.072688	0.94	0.35	-0.07447	0.210461
polity2						
L1.	-0.01999	0.022013	-0.91	0.364	-0.06313	0.023156
_cons	2.591878	0.963104	2.69	0.007	0.70423	4.479527
rho	-0.04539					

*D signifies change

edsppct	Coef. Std. Err.	z	P>z [95%	Conf.	Interval]	
edsppct						
L1.	0.826997	0.048611	17.01	0	0.731722	0.922272
sscsppct						
L1.	-0.02161	0.022538	-0.96	0.338	-0.06578	0.022565
totgdp						
L1.	-0.01493	0.027154	-0.55	0.582	-0.06815	0.03829
rgdpch						
L1.	-3E-05	8.08E-05	-0.37	0.714	-0.00019	0.000129
totsppct						
L1.	-0.00453	0.021183	-0.21	0.831	-0.04605	0.036989
hsesppct						
L1.	0.041495	0.070295	0.59	0.555	-0.09628	0.17927
polity2						
L1.	0.021927	0.02062	1.06	0.288	-0.01849	0.062342
_cons	2.695684	0.771146	3.5	0	1.184266	4.207103
rho	0.003732					

edsppct	Coef. Std. Err.	z	P>z [95%	Conf.	Interval]	
edsppct						
L1.	0.859266	0.065949	13.03	0	0.730009	0.988523
sscsppct						
L5.	0.008774	0.016791	0.52	0.601	-0.02414	0.041684
totgdp						
L1.	-0.014	0.044151	-0.32	0.751	-0.10053	0.072537
rgdpch						
L1.	0.000039	8.91E-05	0.44	0.662	-0.00014	0.000214
totsppct						
L1.	-0.02561	0.018082	-1.42	0.157	-0.06105	0.00983
hsesppct						
L1.	0.075329	0.066846	1.13	0.26	-0.05569	0.206345
polity2						
L1.	-0.02527	0.018672	-1.35	0.176	-0.06186	0.011329
_cons	2.578308	0.954786	2.7	0.007	0.706962	4.449655
rho	-0.03413					

edsppct	Coef. Std. Err.	z	P>z [95%	Conf.	Interval]	
edsppct						
L1.	0.896522	0.076378	11.74	0	0.746824	1.04622
sscsppct						
L10.	0.035071	0.01619	2.17	0.03	0.003338	0.066803
totgdp						
L1.	0.075184	0.045579	1.65	0.099	-0.01415	0.164517
rgdpch						
L1.	7.89E-06	0.00027	0.03	0.977	-0.00052	0.000536
totsppct						
L1.	-0.02458	0.038073	-0.65	0.518	-0.0992	0.050038
hsesppct						
L1.	0.173715	0.072018	2.41	0.016	0.032562	0.314868
polity2						
L1.	-0.30972	0.14423	-2.15	0.032	-0.59241	-0.02704
_cons	2.683276	1.242841	2.16	0.031	0.247352	5.1192
rho	-0.07776					

* L signifies lagged